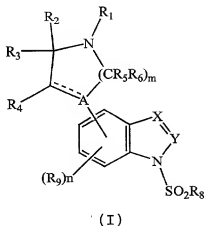


## WHAT IS CLAIMED IS:

1. A compound of formula I



wherein

A is C, CR<sub>10</sub> or N;

X is CR<sub>11</sub> or N;

Y is CR<sub>7</sub> or N with the proviso that when X is N, then Y must be CR<sub>7</sub>;

R<sub>1</sub> is H, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyloxy or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>6</sub>alkynyl or cycloheteroalkyl group each optionally substituted;

R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are each independently H, halogen, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkyl group;

R<sub>7</sub> and R<sub>11</sub> are each independently H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl, heteroaryl or C<sub>1</sub>-C<sub>6</sub>alkoxy group each optionally substituted;

R<sub>8</sub> is an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl or heteroaryl group each optionally substituted;

R<sub>9</sub> is H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkenyl, aryl or heteroaryl group each optionally substituted;

R<sub>10</sub> is H, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkoxy group;

$m$  is an integer of 1, 2 or 3;

$n$  is 0 or an integer of 1, 2 or 3; and

---- represents a single bond or a double bond; or a pharmaceutically acceptable salt thereof.

2. The compound according to claim 1 wherein A is N and m is 2.

3. The compound according to claim 1 wherein R<sub>8</sub> is an optionally substituted phenyl group.

4. The compound according to claim 1 wherein  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are H.

5. The compound according to claim 2 wherein R<sub>1</sub> is H or a C<sub>1</sub>-C<sub>6</sub>alkyl or cycloheteroalkyl group each optionally substituted.

6. The compound according to claim 5 selected from the group consisting of:

1-(phenylsulfonyl)-4-piperazin-1-yl-1H-indole;

1-[(2-bromophenyl)sulfonyl]-4-piperazin-1-yl-1H-indole;

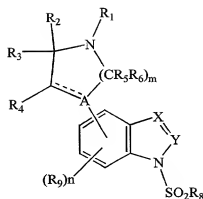
1-[ (6-chloroimidazo[2,1-b][1,3]thiazol-5-yl) sulfonyl]-4-piperazin-1-yl-1H-indole;

1-[ (3,4-dimethoxyphenyl) sulfonyl] -4-piperazin-1-yl-1H-indole;

- 1- [(5-chloro-3-methyl-1-benzothien-2-yl) sulfonyl] -4-piperazin-1-yl-1H-indole;
- 1- [(4-bromophenyl) sulfonyl] -4-piperazin-1-yl-1H-indole;
- 1- [(5-bromothien-2-yl) sulfonyl] -4-piperazin-1-yl-1H-indole;
- 5 1- [(4,5-dichlorothien-2-yl) sulfonyl] -4-piperazin-1-yl-1H-indole;
- methyl 4-[(4-piperazin-1-yl-1H-indol-1-yl) sulfonyl]phenyl ether;
- 10 4-piperazin-1-yl-1-{ [4-(trifluoromethoxy)phenyl] sulfonyl} -1H-indole;
- 4-(4-benzylpiperazin-1-yl) -1-(phenylsulfonyl) -1H-indole;
- 4-(4-benzylpiperazin-1-yl) -1-[(2-bromophenyl) sulfonyl] -1H-indole;
- 15 4-(4-benzylpiperazin-1-yl) -1-[(6-chloroimidazo[2,1-b][1,3]thiazol-5-yl) sulfonyl] -1H-indole;
- 4-(4-benzylpiperazin-1-yl) -1-[(3,4-dimethoxyphenyl) sulfonyl] -1H-indole;
- 4-[4-(3-methoxybenzyl)piperazin-1-yl] -1-(phenylsulfonyl) -1H-indole;
- 20 1-(phenylsulfonyl) -4-[4-(pyridin-4-ylmethyl)piperazin-1-yl] -1H-indole;
- 1-(phenylsulfonyl) -4-[4-(pyridin-3-ylmethyl)piperazin-1-yl] -1H-indole;
- 25 1-[(2-bromophenyl) sulfonyl] -4-[4-(3-methoxybenzyl)piperazin-1-yl] -1H-indole;
- 1-[(2-bromophenyl) sulfonyl] -4-[4-(pyridin-4-ylmethyl)piperazin-1-yl] -1H-indole;
- 1-[(2-bromophenyl) sulfonyl] -4-[4-(pyridin-3-ylmethyl)piperazin-1-yl] -1H-indole;
- 30 1-(phenylsulfonyl) -5-piperazin-1-yl-1H-indazole;

- 1- (phenylsulfonyl) -6-piperazin-1-yl-1H-indazole;  
 1- [(2-bromophenyl) sulfonyl] -6-piperazin-1-yl-1H-indazole;  
 1- [(4-bromophenyl) sulfonyl] -5-piperazin-1-yl-1H-indazole;  
 1- [(4-bromophenyl) sulfonyl] -6-piperazin-1-yl-1H-indazole;  
 5 1- [(5-bromothien-2-yl) sulfonyl] -5-piperazin-1-yl-1H-indazole;  
 1- [(5-bromothien-2-yl) sulfonyl] -6-piperazin-1-yl-1H-indazole;  
 1- [(4-fluorophenyl) sulfonyl] -5-piperazin-1-yl-1H-indazole;  
 10 1- [(4-fluorophenyl) sulfonyl] -6-piperazin-1-yl-1H-indazole;  
 methyl 4- [(5-piperazin-1-yl-1H-indazol-1-yl) sulfonyl] phenyl ether;  
 15 1-phenylsulfonyl-4- (4-propylpiperazin-1-yl) -1H-indazole;  
 1-phenylsulfonyl-4-piperazin-1-yl-1H-indazole;  
 1-phenylsulfonyl-4- (4-phenethylpiperazin-1-yl) -1H-indazole;  
 1-phenylsulfonyl-4- [4- (3-phenylpropyl) -piperazin-1-yl] -  
 20 1H-indazole; and  
 the pharmaceutically acceptable salts thereof.

7. A method for the treatment of a disorder of the central nervous system related to or affected by the 5-HT<sub>6</sub> receptor in a patient in need thereof which comprises  
 25 administering to said patient a therapeutically effective amount of a compound of formula I.



(I)

wherein

A is C, CR<sub>10</sub> or N;

X is CR<sub>11</sub> or N;

Y is CR<sub>7</sub> or N with the proviso that when X is N, then Y must be CR<sub>7</sub>;

R<sub>1</sub> is H, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyloxy or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>6</sub>alkynyl or cycloheteroalkyl group each optionally substituted;

R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are each independently H, halogen, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkyl group;

R<sub>7</sub> and R<sub>11</sub> are each independently H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl, heteroaryl or C<sub>1</sub>-C<sub>6</sub>alkoxy group each optionally substituted;

R<sub>8</sub> is an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl or heteroaryl group each optionally substituted;

R<sub>9</sub> is H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkenyl, aryl or heteroaryl group each optionally substituted;

R<sub>10</sub> is H, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkoxy group;

m is an integer of 1, 2 or 3;

n is 0 or an integer of 1, 2 or 3; and

--- represents a single bond or a double bond; or a pharmaceutically acceptable salt thereof.

5

8. The method according to claim 7 wherein said disorder is a motor disorder, anxiety disorder or cognitive disorder.

10

9. The method according to claim 7 wherein said disorder is schizophrenia or depression.

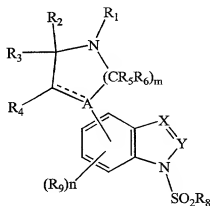
10. The method according to claim 8 wherein said cognitive disorder is a neurodegenerative disorder.

15

11. The method according to claim 10 wherein said neurodegenerative disorder is Alzheimer's disease or Parkinson's disease

20

12. A pharmaceutical composition which comprises a pharmaceutically acceptable carrier and an effective amount of a compound of formula I.



(I)

wherein

A is C, CR<sub>10</sub> or N;

X is CR<sub>11</sub> or N;

Y is CR<sub>7</sub> or N with the proviso that when X is N, then

5           Y must be CR<sub>7</sub>;

R<sub>1</sub> is H, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyloxy or  
an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>6</sub>alkynyl or  
cycloheteroalkyl group each optionally  
substituted;

10       R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are each independently H,  
halogen, OH or an optionally substituted C<sub>1</sub>-  
C<sub>6</sub>alkyl group;

      R<sub>7</sub> and R<sub>11</sub> are each independently H, halogen or an C<sub>1</sub>-  
C<sub>6</sub>alkyl, aryl, heteroaryl or C<sub>1</sub>-C<sub>6</sub>alkoxy group  
15       each optionally substituted;

R<sub>8</sub> is an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl or heteroaryl group each  
optionally substituted;

R<sub>9</sub> is H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-  
C<sub>6</sub>alkenyl, aryl or heteroaryl group each  
20       optionally substituted;

R<sub>10</sub> is H, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkoxy  
group;

m is an integer of 1, 2 or 3;

n is 0 or an integer of 1, 2 or 3; and

25       --- represents a single bond or a double bond; or  
a pharmaceutically acceptable salt thereof.

13. The composition according to claim 12 wherein A  
is N and m is 2.

30

14. The composition according to claim 12 wherein R<sub>3</sub> is an optionally substituted phenyl group.

15. The composition according to claim 12 wherein  
5 R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are H.

16. The composition according to claim 13 wherein R<sub>1</sub> is H or a C<sub>1</sub>-C<sub>6</sub>alkyl or cycloheteroalkyl group each optionally substituted.

10

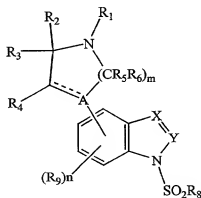
17. The composition according to claim 16 having a compound of formula I selected from the group consisting of:

- 1- (phenylsulfonyl) -4-piperazin-1-yl-1H-indole;  
15 1- [(2-bromophenyl) sulfonyl] -4-piperazin-1-yl-1H-indole;  
1- [(6-chloroimidazo [2,1-b] [1,3] thiazol-5-yl) sulfonyl] -4-piperazin-1-yl-1H-indole;  
1- [(3,4-dimethoxyphenyl) sulfonyl] -4-piperazin-1-yl-1H-indole;  
20 1- [(5-chloro-3-methyl-1-benzothien-2-yl) sulfonyl] -4-piperazin-1-yl-1H-indole;  
1- [(4-bromophenyl) sulfonyl] -4-piperazin-1-yl-1H-indole;  
1- [(5-bromothien-2-yl) sulfonyl] -4-piperazin-1-yl-1H-indole;  
25 1- [(4,5-dichlorothien-2-yl) sulfonyl] -4-piperazin-1-yl-1H-indole;  
methyl 4- [(4-piperazin-1-yl-1H-indol-1-yl) sulfonyl] phenyl ether;  
4-piperazin-1-yl-1- { [4-  
30 (trifluoromethoxy) phenyl] sulfonyl} -1H-indole;  
4- (4-benzylpiperazin-1-yl) -1- (phenylsulfonyl) -1H-indole;

- 4- (4-benzylpiperazin-1-yl) -1- [(2-bromophenyl) sulfonyl] -  
1H-indole;
- 4- (4-benzylpiperazin-1-yl) -1- [(6-chloroimidazo[2,1-  
b][1,3]thiazol-5-yl) sulfonyl] -1H-indole;
- 5 4- (4-benzylpiperazin-1-yl) -1- [(3,4-  
dimethoxyphenyl) sulfonyl] -1H-indole;
- 4- [4- (3-methoxybenzyl) piperazin-1-yl] -1- (phenylsulfonyl) -  
1H-indole;
- 1- (phenylsulfonyl) -4- [4- (pyridin-4-ylmethyl) piperazin-1-  
yl] -1H-indole;
- 10 1- (phenylsulfonyl) -4- [4- (pyridin-3-ylmethyl) piperazin-1-  
yl] -1H-indole;
- 1- [(2-bromophenyl) sulfonyl] -4- [4- (3-  
methoxybenzyl) piperazin-1-yl] -1H-indole;
- 15 1- [(2-bromophenyl) sulfonyl] -4- [4- (pyridin-4-  
ylmethyl) piperazin-1-yl] -1H-indole;
- 1- [(2-bromophenyl) sulfonyl] -4- [4- (pyridin-3-  
ylmethyl) piperazin-1-yl] -1H-indole;
- 1- (phenylsulfonyl) -5-piperazin-1-yl-1H-indazole;
- 20 1- (phenylsulfonyl) -6-piperazin-1-yl-1H-indazole;
- 1- [(2-bromophenyl) sulfonyl] -6-piperazin-1-yl-1H-indazole;
- 1- [(4-bromophenyl) sulfonyl] -5-piperazin-1-yl-1H-indazole;
- 1- [(4-bromophenyl) sulfonyl] -6-piperazin-1-yl-1H-indazole;
- 1- [(5-bromothien-2-yl) sulfonyl] -5-piperazin-1-yl-1H-  
25 indazole;
- 1- [(5-bromothien-2-yl) sulfonyl] -6-piperazin-1-yl-1H-  
indazole;
- 1- [(4-fluorophenyl) sulfonyl] -5-piperazin-1-yl-1H-  
indazole;
- 30 1- [(4-fluorophenyl) sulfonyl] -6-piperazin-1-yl-1H-  
indazole;

methyl 4-[(5-piperazin-1-yl)-1H-indazol-1-yl)sulfonyl]phenyl ether;  
 1-phenylsulfonyl-4-(4-propylpiperazin-1-yl)-1H-indazole;  
 1-phenylsulfonyl-4-piperazin-1-yl-1H-indazole;  
 1-phenylsulfonyl-4-(4-phenethylpiperazin-1-yl)-1H-indazole;  
 1-phenylsulfonyl-4-[4-(3-phenylpropyl)-piperazin-1-yl]-1H-indazole; and  
 the pharmaceutically acceptable salts thereof.

18. A method for the preparation of a compound of formula I.



(I)

wherein

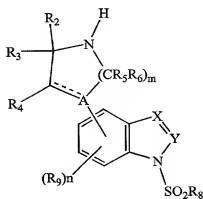
A is C, CR<sub>10</sub> or N;

X is CR<sub>11</sub> or N;

Y is CR<sub>7</sub> or N with the proviso that when X is N, then Y must be CR<sub>7</sub>;

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyloxy or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>6</sub>alkynyl or cycloheteroalkyl group each optionally substituted;

$R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are each independently H, halogen, OH or an optionally substituted  $C_1$ - $C_6$ alkyl group;  
 $R_7$  and  $R_{11}$  are each independently H, halogen or an  $C_1$ - $C_6$ alkyl, aryl, heteroaryl or alkoxy group each optionally substituted;  
 $R_8$  is an  $C_1$ - $C_6$ alkyl, aryl or heteroaryl group each optionally substituted;  
 $R_9$  is H, halogen or an  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkoxy,  $C_1$ - $C_6$ alkenyl, aryl or heteroaryl group each optionally substituted;  
 $R_{10}$  is H, OH or an optionally substituted  $C_1$ - $C_6$ alkoxy group;  
 $m$  is an integer of 1, 2 or 3;  
 $n$  is 0 or an integer of 1, 2 or 3; and  
 ---- represents a single bond or a double bond  
 said method which comprises reacting a compound of formula Ia



(Ia)

wherein A, X,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $m$  and  $n$  are as defined hereinabove for formula I with a compound  $R_1$ -Hal

wherein  $R_1$  is as defined hereinabove for formula I and Hal is Cl, Br or I.

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